Lecture 6: Efficient Markets

Economics 252, Spring 2008

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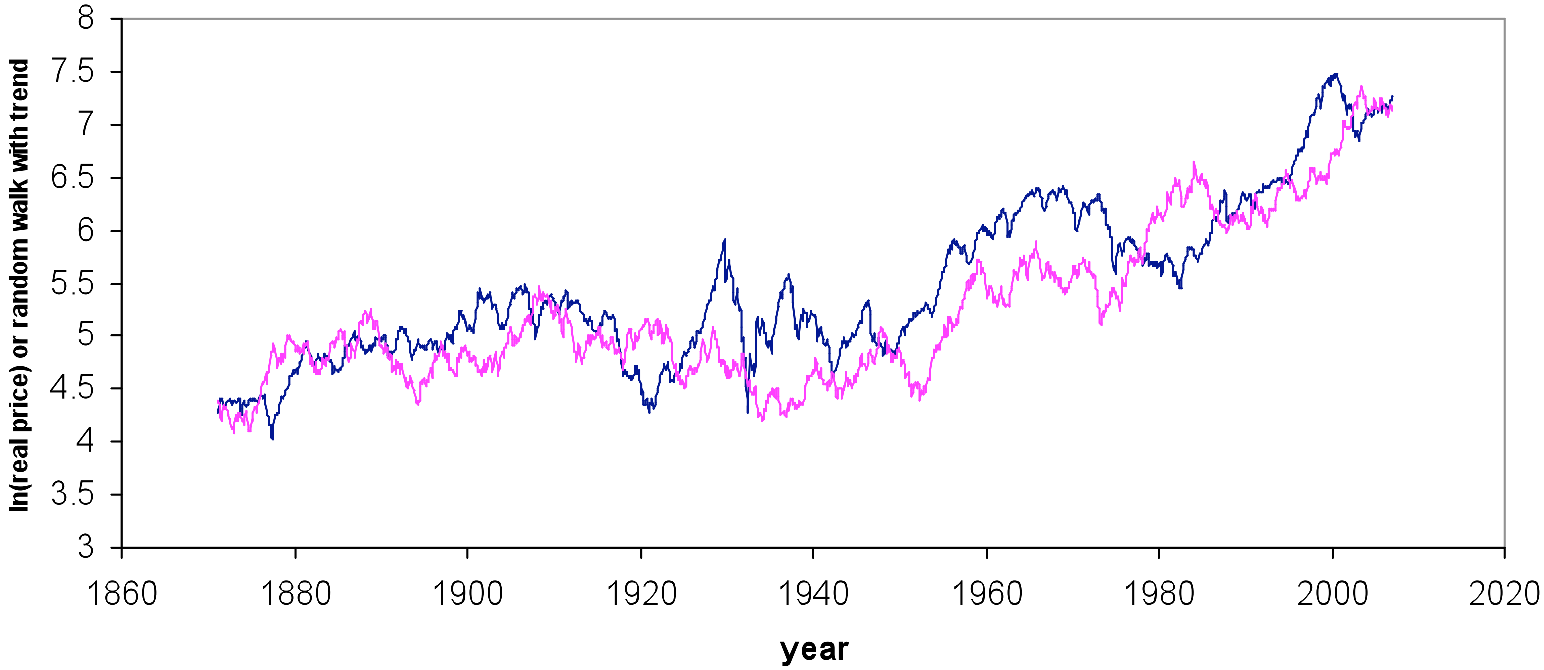
Price as PDV of Expected Dividends

- If earnings equal dividends and if dividends grow at long-run rate g, then by growing consol model $P=E/(r-g)$, $P/E=1/(r-g)$. (Gordon Model)
- So, efficient markets theory with Gordon model purports to explain why P/E varies across stocks: different stocks have different g.

Random Walk & AR-1 Models

- Random Walk: $x_t = x_{t-1} + \varepsilon_t$
- First-order autoregressive (AR-1) Model: $x_t = 100 + \rho(x_{t-1} - 100) + \varepsilon_t$. Mean reverting (to 100), $-1 < \rho < 1$.
- Random walk as approximate implication of unpredictability of returns
- Similarity of both random walk and AR-1 to actual stock prices

Actual US Stock Market and Random Walk with Trend



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Actual US Stock Market & AR-1(ρ=.98) with trend